

A Non-Governmental Organization for the Salish Sea

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Abstract

The Puget Sound Georgia Basin marine ecosystem of Washington and British Columbia is saturated with species biodiversity that's richness is matched by only a handful of other regions in the world. Countless marine mammals, shellfish, invertebrates and plants have thrived in and around the nutrient rich waters of North America's second largest estuary for thousands of years. Because of this abundance of life, Native American Tribes and First Nations settled in this area and developed a lifelong bond with their surroundings. Today the health and survival of the inland sea is in jeopardy. The area's growing population and development place additional pressure on an ecosystem already struggling from years of anthropogenic pollutions intentionally and unintentionally finding their way into the marine waters of the Puget Sound and Georgia Straits. On both sides of the international border there are attempts being made to protect, manage and restore certain areas of the trans-boundary marine ecosystem. Governmental agencies and private organizations of British Columbia and Washington State have recognized the need to work together on our regions marine issues. In recent years they have strived to develop efficient and productive working relationships. The problem is, everyone trying to develop these trans-boundary relations is simultaneously working on dozens of other things. However, if there were an organization focused specifically on the area's marine issues without regard for the political boundary that divides and disconnects the continuous ecosystem, there is potential to achieve loftier goals. After all, shouldn't a marine ecosystem and marine species that know no boundaries be managed, protected and restored by an organization that also knows no boundaries?

As British Columbia and Washington State move into the 21st century, the environmental problems impacting our corner of the earth are becoming more severe and the action needed to address them more urgent. The health of the Puget Sound and Straits of Georgia does not appear degraded to the common eye, but a closer look reveals a history of pollution and habitat loss while the future suggests unprecedented population growth and continued environmental degradation¹⁹. It is just the last decade that scientists, marine stakeholders and governmental agencies have scrambled to understand the natural cycles of the region and develop programs and policies to manage this diverse and complex ecosystem.

When it comes to environmental management information, values, resources and power are fragmented across geographic boundaries, social groups, organizations and agencies¹⁸. It seems obvious that the most effective way to successfully manage a region is by breaking down the barriers that restrict communication and ultimately the achievement of goals. Living in the Information Age we have the technology to share information and ideas across borders as easily as with the person in the neighboring cubicle. Cooperation at appropriate levels is essential for our ability to understand and attempt to manage any ecosystem, at any level, anywhere in the world. The health of the inland sea that British Columbia and Washington State share depends on this cooperation.

The Salish Sea

About 60 million years ago, large plates of the earth's continental crust collided, forming the Olympic, Coastal, and Cascade mountain ranges in British Columbia and Washington State. Between 150,000 and 15,000 years ago glaciers repeatedly advanced into and retreated from the region. When the last glacier retreated, a large indentation had been carved into the earth that would soon fill with water from the Pacific Ocean as well as multiple rivers and creeks. Dozens of indigenous peoples begin to settle in the area taking advantage of the temperate climate and plentiful sources of food. The "Indians" lived as one with the land and developed a sacred bond with the terrestrial and marine species that occupied the region. It wasn't until the mid 1800s that a political boundary divided the region in half, separating an area that was created as one and functioned as one. The indigenous peoples of the Puget Sound Georgia Basin region are known as Coast Salish and the region they occupy, fittingly, is the Salish Sea, a trans-boundary inland sea. They called the region "Sq̓la-l̓ot-sis," which means "homeland"⁷.

The Puget Sound Georgia Basin watershed is an extremely diverse ecosystem that's natural beauty is infrequently rivaled outside its region. The Cascade, Coastal and Olympic mountains along with Vancouver Island surround the inland sea and provide exquisite vistas and extensive wildlife habitat. Considered one large estuary, the tidal fluctuations and freshwater inputs support an ecosystem that contains an estimated 3,000 species of marine plants and animals

Environmental Issues of the Salish Sea

Population

The Puget Sound/Georgia Basin area has experienced rapid growth during the last several decades. Between the years 1991-2000 the population of the area grew at a rate of 18.65%, reasonably faster than the 11.6% and 9.7% reported for the whole of the U.S. and Canada respectively ⁶. By the year 2020 the population is expected to increase another 2 million bringing the total close to 9 million people.

Growing population is a major underlying force contributing to the increasing stress being placed on our unbalanced and unhealthy ecosystem. Extracting trees and minerals will increase along with agriculture, in order to support the growing number of Sound and Straits residents. These activities will cause unwanted runoff of soil and nutrients that will take away the stability all ecosystems strive to achieve ¹⁶. Industries will expand as more cars, homes, garbage and sewage appear with the expanding population. Without coordinated planning, the health of marine ecosystems may persistently deteriorate as more and more people move into the area.

Loss of Habitat

Directly related to the increase in the area's population is the problem of losing habitat suitable for marine species. As more people move into the area, forestry, agricultural practices, industry and urban development degrade water and habitat vital to the health of marine species ¹². For years people have been changing watersheds by damming, diking and paving over fragile ecosystems that are primary breeding and rearing grounds for many species of fish, marine mammals and sea birds. In Puget Sound over 80% of the estuaries have been damaged beyond repair ¹⁵ and over 3000 miles of potential salmon spawning waterways are no longer accessible ¹⁹.

Oil Spills

Several thousand oil tankers a year travel through the Strait of Juan de Fuca in route to the numerous oil refineries that lie on the shores of Puget Sound and Georgia Basin. We can consider ourselves lucky that an Exxon Valdez-type oil spill has not occurred in the area yet. The narrow channels and tight corners of the Salish Sea make navigating a 400-foot tanker no easy task, and with the amount of tanker traffic it is only a matter of time before we are confronted with a major accident. The time it takes to fill up the gas tank of your car an oil tanker can find itself headed towards a submerged rock capable of tearing a hole in its hull.

Species At Risk

Marine Mammals: harbor seals and killer whales

Large mammals that reside atop the Puget Sound/Georgia Basin food web are good indicators of the overall health of the ecosystem. Chemicals being released into marine environments that do not break down easily, known as persistent organic pollutants (POPs), bioaccumulate as they move higher up a food chain. The most visual chemicals include polychlorinated biphenyls (PCB's), polychlorinated-dibenzo-p-dioxins (dioxins) and polychlorinated-dibenzofurans (furans) ⁶. Alarming high levels of these chemicals have been found in dead marine mammal predators such as killer whales and harbor seals. Because these predators prey on a wide range of fish and invertebrates, this discovery indicates that these pollutants are affecting many of the plants and animals that make up the area's food web. The sources of these pollutants come from both sides of the border and affect species that utilize the entire Sound and Straits region. This makes it vital that British Columbia and Washington see eye-to-eye as far as recognizing and addressing this problem.

Fish: salmon and bottomfish

Fish populations in the Puget Sound Georgia Basin region have shown significant decline in the past couple of decades. Throughout the shared waters, rockfish stocks are depressed ¹², lingcod stocks have collapsed, and Pollock, Pacific cod and hake stocks are below average ¹⁴. Of the 28 stocks of rockfish in the area, 15 of them were surveyed to be below average, depressed or in critical conditions ¹⁹. Salmon have been federally recognized as an endangered species and the heightened awareness has prompted assertive efforts to restore and protect key resting, feeding and rearing areas for salmon.

The list of reasons attributed to this decline varies from person to person and place to place. However, ask any fisherman that has made a living in the Salish Sea and they'll tell you that the size and number of fish they catch has diminished greatly over the past 30 years. Over-fishing is obviously one cause for this decline, but changes in physical ocean properties, loss of habitat, and increased pollution all contribute significantly.

Shellfish

Like fish, several species of shellfish are commercially important to residents of the Salish Sea. Oysters, clams, mussels, scallops and abalone are all harvested and their populations remain fairly steady, in part because of the many organized farming efforts in the area. However, as siphon feeders, shellfish can be excellent indicators on the quality of the surrounding water. Excess nutrients added to the water from agricultural runoff and septic overflow can cause algae blooms that make shellfish unharvestable and potentially deadly to humans. These toxic algae blooms are responsible for numerous harvesting closures every year in the trans-boundary waters of British Columbia and Washington State ¹⁵

Shellfish have also been studied in order to determine levels of toxic contaminants in water, specifically PCB's. Following their ban in the 1970s, PCB levels found in mussels declined for over a decade before an unexplained increase during the 1990s ¹². Further monitoring of shellfish will help track pollution levels in the Salish Sea.

Non-Governmental Organizations in the Salish Sea Region

What is an NGO?

A non-governmental organization (NGO) is defined by any non-profit, voluntary, service-oriented/development-oriented organization of private individuals that works on selected issues on a local, national or international scale ². The type of service that NGOs provide can vary widely. In one way or another, most NGOs attempt to bring citizen concerns to the attention of governments by advocating and monitoring policies and encouraging political participation. NGOs can provide analysis and expertise to many situations and help monitor and implement international agreements.

Advantages and Disadvantages of NGOs

Given any particular task there are many ways to go about approaching it. In the area of environmental conservation there are three main participants; the government, NGOs, and community/private interest groups. Each participant contributes differently with varying levels of success and effectiveness. Governmental agencies have the ability to obtain expert personnel and large amounts of money. Community and private interest groups are usually lacking money and sometimes expertise but often benefit from considerable community support.

NGOs possess a number of strengths that assist their efforts while working on environmental issues. They have the ability to experiment freely with innovative approaches and to take risks when necessary. They have the capacity to reach and communicate with individuals and neighborhoods as well as the top levels of government. Finally, the highly motivated staffs of NGOs are flexible enough to adapt to local situations and respond to the needs of small groups that would otherwise go unnoticed ².

At the same time, the success of NGOs is sometimes hindered by their various weaknesses. If several NGOs in one area are working on similar issues but not necessarily working together, the competitiveness for funding and public support can slow the progress of all interested parties. NGOs may also be hurt by their access to available information, in particular in Canada, where information from scientific studies is not always available to the public.

People for Puget Sound

During the 1980s there was serious consideration by state agencies in Washington to create a marine sanctuary in northern Puget Sound. The federal government never became too involved, and the idea didn't materialize as many had hoped ²⁰. However, public interest on the health of Puget Sound increased during these years and paved the way for the creation of People for Puget Sound (PPS) in 1991. After 11 plus years of existence, PPS is considered by many to be the states premier non-governmental organization working on marine issues in the Puget Sound region.

With their mission statement focused on protecting and restoring the Puget Sound and Northwest Straits, People for Puget Sound is committed to reducing and eventually eliminating sources of pollution into the sound and preventing additional destruction of natural habitats ¹¹. Their approach to looking after the Puget Sound is carried out through educating communities and helping people establish a sense of personal pride and ownership in the health of their environment. PPS also works on building strong relations with government and business groups in an attempt to create a network of people that can work together on the marine issues of Puget Sound.

One of People for Puget Sound's main objectives is to address the problem of habitat loss and degradation in Puget Sound. A public goal of "no new loss" of marine habitat has been declared and an action plan developed in order to achieve this goal. PPS has worked to strengthen the enforcement of the Growth Management Act, the Shoreline Management Act, and the Clean Water Act, all of which strive to protect wetlands, estuaries and shorelines.

Responding to an international marine science panel's 1994 report that identified the permanent loss of nearshore marine and estuarine habitat as the biggest environmental problem facing our region ¹³, PPS decided to assess the situation themselves. They found that little information on the extent and rate of habitat degradation was available to support such a statement. In response People for Puget Sound created a program called the Citizens Shoreline Inventory (CSI) that depended on volunteers to collect and compile information on the plant and animal species present on the shorelines of Puget Sound.

After three partially successful years of the CSI program, the Washington Department of Natural Resources came out with a database of shoreline habitats called Shorezone. At this time PPS modified the CSI program into the Rapid Shoreline Inventory program (RSI), a program that would provide detailed information to compliment the broad information made available by Shorezone. Because of PPS's efforts, dozens of miles of shoreline have been inventoried and their condition recorded creating invaluable information for future environmental management planning.

In addition to taking inventory on nearshore habitat, PPS has worked to identify and rank estuaries in Skagit County that are in need of restoration. Healthy estuaries are essential to the success of many species of marine fish, including salmon. PPS uses ARC GRID and ArcView to analyze tidal influence and flooding, hydrologic zones, ecologic sustainability, land cover, and parcel density in order to identify habitat in need of rehabilitation. PPS is currently applying these efforts exclusively to Skagit County, but could easily extend the assessment to any estuary in the region.

Another area that has received attention from People for Puget Sound is obtaining the services of a tugboat that's purpose would be oil spill prevention. The tug is stationed in Neah Bay and provides assistance to distressed oil tankers entering or exiting the Salish Sea through the Strait of Juan de Fuca. PPS is primarily responsible for getting the state to fund a seasonal tug, which has already helped over 10 vessels in trouble, potentially preventing a disastrous oil spill ⁹.

Georgia Strait Alliance

Georgia Strait Alliance (GSA) came into being in 1990 by a group of citizens concerned about the escalating levels of pollution and the degradation of the inland waters of the Straits of Georgia. Created only one year before People for Puget Sound, the two NGOs have similar objectives and goals and have developed an excellent working relationship over the last dozen years. Georgia Strait Alliance works towards protecting marine biodiversity and wildlife habitat, raising the awareness of decision makers, industries and the general public, and returning the water and air quality of the region ⁷.

GSA currently works on several issues that threaten the integrity of marine ecosystems in the Sound and Straits. The alliance has put forth a good deal of time and energy in raising awareness about the proposed natural gas pipeline that would cross the Georgia Strait on route to Vancouver Island. If built the pipeline would pass through a site being considered as a National Marine Conservation Area and would run adjacent to a marine Ecological Reserve, compromising the health of the surrounding environment along the entire length of the pipeline ⁷.

Another project that has consumed a good deal of staff time and energy from GSA is its participation in the Central Coast Land and Coastal Resource Management Plan (CCLCRMP). Since 1999, GSA has worked to improve the flawed plan for the future management of coastal resources in British Columbia. Although the federal and provincial governments have been unwilling to modify the plan, GSA has succeeded in organizing a majority of stakeholders and First Nations to speak up against the expansion of the highly toxic practice of fish farming ⁷.

Perhaps the most threatening and publicized problem facing the Georgia Straits is the industrial pollution and sewage being discharged directly into the marine waters. Despite supposedly being phased out, organochlorine continues to be released by numerous B.C. pulp mills unregulated into the nearby waters. If that wasn't contaminating enough, many sewage treatment facilities in B.C., notably; Victoria, Nanaimo and two of the four treatment facilities in the Greater Vancouver Regional District, are still releasing untreated sewage directly into the Salish Sea. The effort needed to deal with an issue is often present; however the funding often is not. This effluent is putting countless numbers of shellfish harvests at risk of contamination. GSA has been applying political pressures on governments from a local to a federal level to deal with these issues. They have also spent time educating communities and individuals that may be at risk or may be contributing to the problem.

Sound and Straits Coalition

The international cooperation between People for Puget Sound and Georgia Strait Alliance has been developing for years. The Sound and Straits Coalition, however, is a new alliance initiated by the two groups to improve international coordination between citizens, NGOs, businesses and communities of B.C. and Washington. The coalition's main focus is

establishing a marine protected area (MPA) that straddles the international boundary between the Gulf Islands of Canada and the San Juan Islands of the United States. After much consideration the proposed MPA has adopted the name Orca Pass International Stewardship Area, in light of the orca whales that make their home in the area.

The Sound and Straits Coalition is a great idea working towards lofty, but achievable, goals and most importantly is encouraging international cooperation aimed at resolving marine issues of the Salish Sea. However, the organization and structure of the coalition seems underdeveloped, which is partially expected considering the money and staff limitations that almost all NGO's experience. Both PPS and GSA have a remarkable history of doing exceptional work with the resources they have and the Sound and Straits Coalition is no exception.

Recommendations

The current trend of NGO management of marine ecosystems in the Puget Sound Georgia Basin watershed is one of the most progressive international relationships between Canada and the United States. Some of the barriers that weaken international relations in other parts of the world; for example, language, religious differences, lack of infrastructure and a disconnected border, are not problems that exist between British Columbia and Washington State. The United States and Canada definitely have their differences (governmental organization, values, etc.); however, compared to other countries our problems can more easily be worked out while working towards common goals.

Creating an international NGO in the Puget Sound Georgia Basin region would be the next logical step in the evolving relationship of Canadian and U.S. NGOs that work on marine issues. Since the water and marine species of the Salish Sea know no boundaries, doesn't it make sense to have an NGO that manages them also know no boundaries? Many countries around the world have already taken the step of creating an international NGO to address the environmental concerns that affect the region as a whole, with little or no regard for political boundaries.

Examples of Successful International Non-Governmental Organizations

Great Lakes United

Great Lakes United (GLU) is an international coalition that is dedicated to protecting and restoring the Great Lakes/St. Lawrence River region ¹. GLU consists of individuals from member organizations representing environmentalists, hunters and anglers, labor unions and community groups as well as citizens of the United States, Canada, First Nations and Tribes.

Beginning in 1986 GLU has elevated the environmental conscience of the Great Lakes region by holding dozens of public meetings that address the area's water quality problems. GLU has evolved into an organization that now develops and promotes effective water policy initiatives, participates in public outreach and education and encourages community action and leadership through grassroots organizations. GLU carries out its work by developing small task forces that can focus their efforts on a single issue. The task forces are made up of people from both sides of the border and often contain many individuals that are not members of Great Lakes United. This type of approach to problem solving is effective because there is a small, diverse group of people working exclusively on a single issue.

One example of such a task force is the Sustainable Waters Task Force. The group focuses on water use and conservation issues that are simultaneously being worked on by governmental groups. In contrast to these governmental groups, GLU's objectives include making cross-border cooperation a priority, including a joint body that will attempt to mediate disputes among the states and providences.

European Environmental Bureau

International NGOs are also successful on a scale that may incorporate many NGOs over several countries. One example is the European Environmental Bureau (EEB), a federation of 134 NGOs found throughout 25 countries. The bureau works towards protecting and conserving the environment while promoting better use of natural resources. One of the main goals of the EEB is to make information available to its member NGO's and to other organizations that are likely to contribute to achieving the aims of the Bureau ³.

A group of NGOs this large is not a practical scheme for the Puget Sound Georgia Basin region, however, the European Environmental Bureau proves that countries, even those with very different governmental agendas, can successfully come together in the name of environmental conservation and management.

Friends of the Earth Middle East

An even greater example of diverse citizens coming together to form an international environmental non-governmental organization is Friends of the Earth Middle East (FoEME). In an area that for years has been unstable due to religious unrest, land ownership disputes, hatred and violence, FoEME has united environmental NGOs from Egypt, Israel, Jordan and Palestine in an effort to achieve common goals of environmental conservation in the sensitive and diverse ecosystems of the Middle East. FoEME aims to integrate its member organizations through networking, capacity and information building and by sponsoring workshops, conferences, and a quarterly newsletter.

FoEME has provided an overlaying structure that has allowed clear objectives to be created and met. These objectives include forging a common agenda among member NGOs, arranging for information collection and sharing to promote environmental advocacy and public education, and addressing trans-boundary environmental issues through effective coordination among involved NGOs ⁵. The Good Water project implements these objectives while attempting to solve water management, use and pollution problems in the trans-boundary aquatic ecosystems within the participating countries. (Dead Sea, Gulf of Aqaba, Jordan River watershed, and the Eastern Mediterranean)

Governments of Canada and the United States Working Together

Presently, the governments of Canada and the United States have identified the need to work together on marine issues of the Salish Sea and are increasing the amount of time and energy they put into developing their relationship. One of the primary international working groups, the Environmental Cooperation Council, was formed by the governments of British Columbia and Washington and in turn created the Puget Sound/Georgia Basin International Task Force. The task force is an assemblage of representatives from federal, provincial and state agencies, tribes, first nations and regional organizations. These representatives address issues presented to them by an international marine science panel.

Another international relationship beginning to grow is that of Environment Canada and the U.S. Environmental Protection Agency. Together they issued a Joint Statement of Cooperation on the Georgia Basin and Puget Sound Ecosystem. The statement is an attempt to get Canada and the United States working together on a federal level on trans-boundary issues that impact the Salish Sea. These are two of many international relationships that are developing today between the governments of Canada and the United States.

As governmental groups begin to cultivate a coordinated approach towards trans-boundary marine issues more people will realize the importance of perceiving the Puget Sound Georgia Basin as one ecosystem and a niche for international cooperation will begin to form in peoples minds. The creation of an international NGO for the Salish Sea region in the coming years could potentially fill this niche and more. Citizens, communities, foundations and governments alike have begun to recognize the need for such an organization and would most likely offer enduring support.

An International Non-Governmental Organization for the Salish Sea Region

An international NGO that operated in the Salish Sea region and worked exclusively on issues pertaining to the health of the marine environment would have the greatest impact of any organization, agency or working group addressing the same issues in the area. I feel that an international NGO in the area could reform common perceptions and practices of ecosystem management and raise awareness to the importance of international cooperation for countries facing similar situations all over the world.

The objectives of a Salish Sea international NGO would be similar to the objectives of many existing NGO's that work on protecting, restoring and managing marine ecosystems.

Education and Outreach

An international NGO would educate the public in a way that remains uniform and consistent on both sides of a border. Currently there are a number of NGOs from British Columbia and Washington State that are working on similar issues and are spending a lot of time and money getting their message heard. The problem is everyone is hearing a slightly different story and may be becoming a little confused. The advantage of having an international community that receives consistent information on environmental issues is fairly evident. In terms of influencing political groups and leaders, a unified voice is always more effective than a fragmented one.

In a recent survey it was shown that school children in British Columbia and Washington State share similar views on current environmental issues, however differences appear when talking about future environmental concerns. Furthermore, the topic of trans-boundary environmental cooperation is absent in both countries education curriculums ⁸. An international NGO in the area could develop a detailed approach in educating the youths of Puget Sound and Georgia

Basin about the importance of recognizing the region as one ecosystem. This would pave the way for future generations to develop relationships and to work as one on trans-boundary environmental issues.

Integrated Database

The creation of an integrated database would attempt to solve the problem of the lack of a central electronic inventory on information concerning the Salish Sea. The database would include scientific literature, management strategies, species inventory and site analysis and would serve as a guide to individuals and groups interested in marine protection, restoration and management. The database would be accessible on the World Wide Web and would be well organized in an effort to make obtaining the information you are looking for quick and easy to find. The Salish Sea NGO would also produce summaries on selected issues and make them available on the web as well as continuously updating the database with the most current information available.

Besides having a database that is accessible by the public, an international NGO could provide their services to community and private groups to consolidate available information on topics of their interest. For example; if a community group in the Gulf Islands were interested in revitalizing their declining shellfish harvest, they may choose to approach the international NGO. The NGO would present them with a consolidated version of all the information available on the area they are interested in. This report would consist of a number of factors that may influence the health of shellfish populations in their area, including, possible sources of pollution that may hinder marine species, the physical ocean properties of the region (tides, currents, temperature, salinity, oxygen and nutrient concentrations) and similar restoration projects attempted in the area.

Ecosystem Modeling Program

To compliment the integrated database an ecosystem-modeling program could be developed specifically for the Salish Sea. The University of British Columbia has already developed the Quest program for the Vancouver region and has offers to complete similar systems for other cities. A Quest-like program for the Salish Sea would raise the public's awareness of the urgent action needed in addressing some of the problems present in their depleted ecosystem. Interactive participation in programs like Quest help create a sense of ownership by its users and ultimately promote individual action.

Long-term Management Plan

If you take a look at all the work that is being done on environmental issues in the Salish Sea there is one thing that is noticeably absent, a long-term ecosystem management plan. To successfully manage any ecosystem it is absolutely necessary to have the forethought to plan for 20, 50, even 100 years in the future. It seems like a long time by human standards, but 100 years to an ecosystem that has been around for millions of years is nothing. Planning for the creation of an international NGO would take into account the need to see well into the future and measures would be taken to ensure the NGO's mission statement, objectives and goals support this vision.

An international non-governmental organization in the Salish Sea is only one possible solution to a very complex problem. The important thing is that the countries of Canada and the United States come together and work collectively on restoring degraded marine habitat, protecting unspoiled sections of the Sound and Straits and managing our international ecosystem in a sustainable manner.

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